

# **CABLE CONNECTOR FOR CONNECTING CIRCUIT BOARD**

## **FIELD OF THE INVENTION**

The present invention relates to a cable connector wherein the hooking piece is conveniently and securely connected to connector.

## **BACKGROUND OF THE INVENTION**

A conventional cable connector 1 is shown in Fig. 1 and generally includes a semi-circular plate 12 extending longitudinally from an end of the cable and two notches 13 are defined in an end surface which is perpendicular to the axis of the cable. A groove 15 is defined in an end edge of the semi-circular plate 12 so that a hooking piece 11 are inserted in the groove 15 with two extensions 110 extending from two longitudinal sides of the semi-circular plate 12. A wire 14 extends from a center of the cable and is located between the two extensions 110 of the hooking piece 11. A circuit board 3 is engaged with the two notches 13 of the connector and the two extensions 110 of the hooking piece 16 are hooked with two holes 32 defined through the circuit board 3. The wire 14 is in contact with a contact point 31 located on a surface of the circuit board 3. It is noted that the groove 15 is difficult to be made in the limited area of the end edge of the semi-circular plate 12 and this often results failure in production.

Fig. 2 shows another embodiment of the conventional connector 1 which has the same structure except for that the groove in Fig. 1 is not necessary and the two extensions 120 are made to be integral with the semi-circular plate 12. Therefore, the notches 13 hold the circuit board 3 and the two extensions 120 are hooked in the holes 32 and the wire 14 is in contact with the contact point 31 on the circuit board 3.

Nevertheless, once either one of the extensions 120 is broken, the whole connector has to be discarded.

The present invention intends to provide a connector wherein the hooking piece is pressed to be fitted into a groove defined in an inner periphery of the semi-circular plate so as to improve the shortcomings of the conventional cable connectors.

### **SUMMARY OF THE INVENTION**

The present invention relates to a cable connector which comprises a cable with a wire extending from a center of an end of the cable. A connector is connected to the end of the cable and a semi-circular plate extends from an end of the connector. Two notches are defined in an end surface of the connector and a groove is defined in an inner periphery of the semi-circular plate. A hooking piece is pressed in the groove and two ends of the hooking piece extend perpendicularly beyond two longitudinal sides of the semi-circular plate.

The present invention will become more obvious from the following description when taken in connection with the accompanying drawings which show, for purposes of illustration only, a preferred embodiment in accordance with the present invention.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 shows a conventional cable connector and a circuit board;

Fig. 2 shows another embodiment of the conventional cable connector and a circuit board;

Fig. 3 shows a hooking piece and the cable connector of the present invention;

Fig. 4 is a cross sectional view to show the cable connector of the present invention;

5 Fig. 5 shows that the cable connector of the present invention is connected to a circuit board;

Fig. 6 is a cross sectional view to show the engagement of the cable connector of the present invention and the circuit board;

Fig. 7 is an end cross sectional view to show the two ends of the hooking  
10 piece hooked into two holes in the circuit board, and

Fig. 8 shows an end view of the hooking piece of the present invention.

### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

Referring to Figs. 3 and 4, the cable connector of the present invention comprises a cable 1 and a wire 14 extends from a center of an end of the cable 1. A  
15 tubular connector 10 is connected to the end of the cable 1 and a semi-circular plate 12 extends from an end of the connector 10. A groove 20 is defined in an inner periphery of the semi-circular plate 12. Two notches 13 are defined in an end surface of the connector 10.

A hooking piece 21 which has a circular cross section as shown in Fig. 6 is  
20 pressed in the groove 20 and two ends of the hooking piece 21 extend perpendicularly beyond two longitudinal sides of the semi-circular plate 12. The circular cross section of the hooking piece 21 can be bent without worry of cracking or broken when compared with the hooking piece having rectangular cross section.

Therefore, the hooking piece 21 is conveniently positioned in the groove 20 by several known methods. Further referring to Fig. 8, each of the two ends of the hooking piece 21 has a bent portion 210 which is formed by bending the hooking piece 21 outward at a distance from a distal end of each of the two ends of the hooking piece 21. A distance between two peaks 211 of the two bent portions 210 is longer than a distance between any two symmetric points on the hooking piece 21 relative to a symmetric line of the hooking piece 21. In other words, the two bent portions 210 provide sufficient flexible feature when engaging holes 32 in the circuit board 3 as shown in Figs. 6 and 7.

The two notches 13 are engaged with an edge of the circuit board 3 and the two bent portions 210 are inserted in the holes 32 in the circuit board 3. The two bent portions 210 are forced inward when passing through the holes 32 and then biased outward to securely connect to the circuit board 3. The wire 14 is in contact with a contact point 31 on the circuit board 3.

The cable connector of the present invention eliminates the inherent shortcomings of the conventional cable connectors.

While we have shown and described the embodiment in accordance with the present invention, it should be clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.